Domestic Investment Grade Fixed Income Market Summary

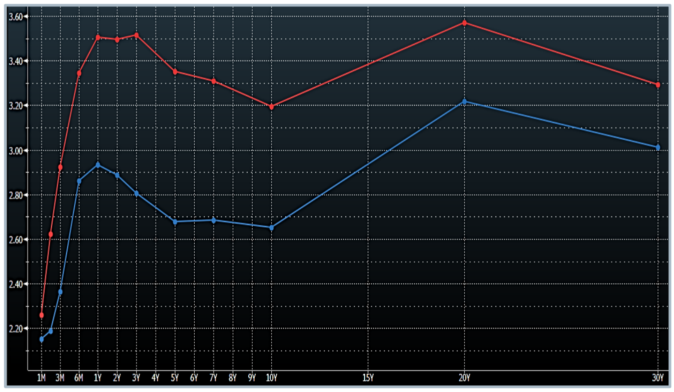
August 2022

Treasury Rates Rose Sharply, Easily Reversed July's Move

- Treasury yields in 2-10-year maturities rose 55-67 basis points (bps) in August, unwinding the previous month's decline in rates.
- Relatively strong economic data and hawkish Fed commentary threw cold water on speculation that the central bank might slow its monetary policy tightening, pushing rates higher.
  - Early in the month, St. Louis Fed President Bullard said he expected the funds rate to be between 3.75% and 4% by year-end, about 50 bps higher than futures indicated at the end of July.
  - Near month-end, Fed Chair Powell commented that rate hikes would continue even if they weigh on economic growth.
  - Futures pricing now projects a 3.75% Fed funds rate at year-end.
- The labor market showed continued strength in July with 528,000 jobs created, the most since February, compared to expectations for less than half that amount as healthcare, professional/business services, and leisure/hospitality led the gains.
  - Average hourly earnings rose 0.5% (expected: 0.3%), and the unemployment rate unexpectedly moved lower to 3.5% with the labor force participation rate ticking higher.
- Institute for Supply Management (ISM) surveys indicated greater than expected growth in July for both the manufacturing and service sectors; however, expansion in the former slowed.
- Inflation showed signs of relief as a decline in energy prices helped keep the Consumer Price Index (CPI) unchanged in July despite expectations of a 0.2% increase.
  - Core CPI rose 0.3% (expected: 0.5%).

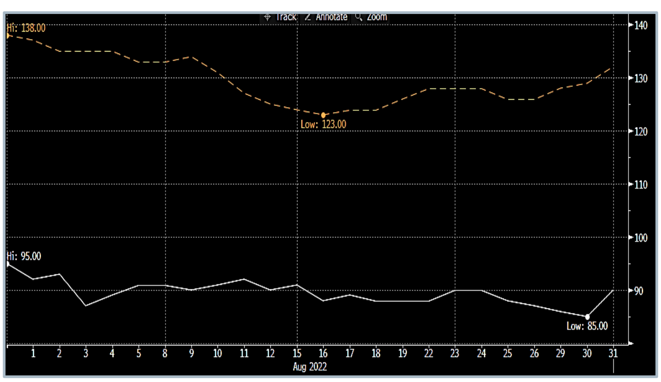
Maturity	7/31/22 Treasury	8/31/22 Treasury	Change
2-year	2.89%	3.50%	0.61%
5-year	2.68%	3.35%	0.67%
7-year	2.68%	3.31%	0.63%
10-year	2.65%	3.20%	0.55%
30-year	3.01%	3.29%	0.28%

Treasury Yield Curve: 7/31/22 (blue) vs. 8/31/22 (red)



Segment	August Return	2022 Return
Bloomberg Barclays Intermediate Government Credit Index	-2.00%	-7.14%
ICE BofA 1-10 Year US Treasury Index	-1.89%	-6.20%
ICE BofA 1-10 Year US Inflation-Linked Treasury Index	-1.85%	-3.66%
ICE BofA 1-10 Year Corporate Index	-1.76%	-8.83%
ICE BofA 1-10 Year Taxable Municipal Index	-1.97%	-7.86%

1-10 Year IG Credit Spreads: Corporate (orange) and Taxable Municipal (white) August 2022



TIPS and Credit Markets Largely Followed the Move in Nominal Treasuries

- Treasury Inflation Protected Securities (TIPS) performance mirrored that of nominal Treasuries during the month as income offset a decline in inflation expectations.
  - After reaching a multi-decade high of 3.04% in April, the 10-year inflation break-even rate has fallen substantially, declining another 7 bps in August to 2.48%.
  - Inflation expectations on shorter maturities fell more sharply due to evolving market projections for Fed policy, as the 5-year TIPS breakeven rate declined 20 bps to 2.59% in August.
- Despite various headwinds including a risk-off market sentiment to end the month, investment grade corporate bonds outperformed Treasuries in August with 1-10 year issues returning 41 bps more than government bonds on a duration-adjusted basis.
  - The majority of outperformance was realized within the BBB rating subset as the highest tier categories (AAA and AA) essentially matched Treasury bond performance.
- On a duration-neutral basis, taxable municipal bonds outperformed Treasuries by a slight margin but lagged the excess return provided by corporate bonds.
- Last month, we referenced FDIC-insured certificates of deposit (CDs) as a potentially attractive credit alternative given spread levels. However, following the August rise in Treasury rates and lag in corresponding CD yield move, spreads compressed to generally unattractive levels by month-end.

Source: Bloomberg; Bureau of Economic Analysis; Federal Reserve; ICE BofA; Veritable, L.P.
All numbers are estimates. See Disclosures for index descriptions and additional information.

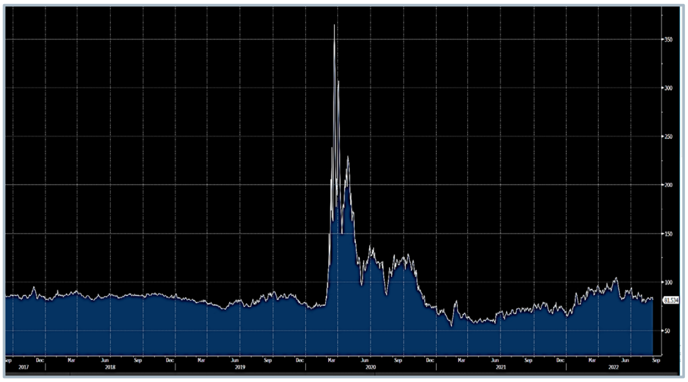
Municipal Yields Followed Treasury Rates Higher, Posted Worst Monthly Performance Since April

- The summer rally that started in June continued through the first week of August before municipal rates rose dramatically along with their taxable counterparts for the remainder of the month.
- AAA tax-exempt rates in 2-10 year maturities rose 38-68 bps, and the municipal curve bear flattened with shorter-term yields rising at a faster pace versus longer maturities.
- Relative performance was mixed, as municipal debt underperformed Treasuries at both ends of the curve but outperformed in the mid-section.
- Expensive relative valuations along with upward pressure from variable rate demand note (VRDN) yields exerted pressure on front-end tax-exempt rates; the 1-year AAA municipal yield rose 83 bps over the month to 2.21% versus a 57 bps rise in the comparable-maturity Treasury rate to 3.51%.
- Meanwhile, AAA tax-exempt rates rose 37-52 bps in the belly of the curve (5-15 year maturities) versus a similar 46-67 bps rise in comparable-maturity Treasury yields.
- Despite short-end underperformance that reflated relative valuations to more palatable levels, yield ratios finished August at around 81% or lower out to ten years, below their respective averages over the past five years.
- For the month, the 10-year AAA municipal yield rose 38 bps to 2.59%.
- The term premium between 2-year and 10-year AAA municipal rates declined 30 bps to 31 bps, well below the 5-year average of around 60 bps.

Maturity	7/31/22 Muni	8/31/22 Muni	Change	% of U.S. Govt 8/31/22
2-Year	1.60%	2.28%	0.68%	65.14%
5-Year	1.80%	2.32%	0.52%	69.25%
7-Year	2.03%	2.40%	0.37%	72.51%
10-Year	2.21%	2.59%	0.38%	80.94%
15-Year	2.53%	2.93%	0.40%	92.43%
20-Year	2.75%	3.14%	0.39%	87.96%
30-Year	2.89%	3.29%	0.40%	100.00%

- According to Refinitiv Lipper, weekly-reporting municipal bond fund outflows accelerated toward month-end catalyzed by Treasury volatility.
  - In August, municipal bond outflows totaled $4.4 billion, up sharply from July's losses of $570 million.
  - Through the week ended August 17th, municipal funds added $236 million before losing $4.6 billion in the second half of the month.
  - Weekly-reporting municipal funds have experienced outflows in 28 of the past 33 weeks through the end of August.

10-Year AAA Municipal-to-Treasury Yield Ratio: 2017-2022



- The 7-10 year maturity range was favored by municipal investors, resulting in the best relative performance with the 10-year yield ratio falling to 81% versus a five-year average of 88%.
- The "defensive demand" theme of June and July reversed with dramatic effect in August, resulting in a sharp sell-off in short-term municipal debt.
  - The 2-year AAA municipal-to-Treasury yield ratio jumped from 55% in July to 65% in August but remained expensive (5-year historical average: 88%).
  - Reflated short-term relative valuations have reduced the attractiveness of crossover investments for wealthy investors.
- Municipal net supply remained negative in August with redemptions exceeding new issuance by $13 billion.
  - July and August represent the most technically-supportive months for tax-exempt debt according to JP Morgan, with net supply in negative territory.
  - Heading out of the 'summer doldrums,' which helped provide a technical tailwind for municipal performance, net supply should begin to normalize in September and October to the tune of +$13 billion according to JP Morgan.
- Inventory levels of municipal debt (as measured by MSRB) jumped in August after bottoming out in June and July. Daily offerings in the final two weeks of the month averaged $9.5 billion, a roughly 50% increase from the $6.3 billion average observed in June and July.
- Volatility in the Treasury market could create more windows of opportunity moving forward via yield spikes especially in a less supportive technical environment in terms of positive net supply post summer reinvestment season.
- Thanks to higher benchmark rates and stretched valuations in portions of the tax-exempt curve, the ICE BofA 1-12 Year Municipal Securities Index produced a -1.63% loss for the month.

Source: Bloomberg; JP Morgan; Refinitiv; Veritable, L.P.
All numbers are estimates. See Disclosures for index descriptions and additional information.

Disclosures

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Index Descriptions *(Investors cannot invest directly in an index)*

Bloomberg Barclays Intermediate Government Credit Index is a total returns index of U.S. dollar denominated U.S. Treasuries, government-related securities, and investment grade U.S. corporate securities that have a remaining maturity of greater than or equal to 1 year and less than 10 years. Securities must have $250 million or more of outstanding face value and must be fixed rate and non-convertible.

ICE BofA 1-10 Year US Treasury Index is a subset of ICE BofA Treasury Index including all securities with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year US Inflation-Linked Treasury Index is a subset of ICE BofA US Inflation-Linked Treasury Index including all securities with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year Corporate Index measures the performance of investment grade corporate bonds of both U.S. and non-U.S. issuers that are U.S. dollar-denominated and publicly issued in the U.S. domestic market with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-10 Year Taxable Municipal Index is designed to track the performance of U.S. dollar-denominated taxable municipal debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. market with a remaining term to final maturity greater than or equal to 1 year and less than 10 years.

ICE BofA 1-12 Year Municipal Securities Ind*ex* is a subset of ICE BofA Municipal Securities Index including all securities with a remaining term to final maturity less than 12 years. The ICE BofA Municipal Securities Index is market capitalization weighted and tracks the performance of U.S. dollar denominated investment grade tax-exempt debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market. Qualifying securities must have at least one-year remaining term to final maturity, at least 18 months to final maturity at the time of issuance, a fixed coupon schedule and an investment grade rating (based on an average of Moody's, S&P and Fitch).

Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The yearly (or monthly) growth rates represent the inflation rate. The CPI is published by the US Bureau of Labor Statistics on a monthly basis.

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